

# Actinopterygii, Siluriformes, Loricariidae, *Loricariichthys platymetopon* Isbrücker and Nijssen, 1979: First record in Reservoir of Canoas II, Middle Paranapanema River, border of the states of São Paulo and Paraná, Brazil

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**ABSTRACT:** First record of the “cascudo”, *Loricariichthys platymetopon* Isbrücker and Nijssen, 1979 in Canoas II Reservoir (Middle Paranapanema River, border of the states of São Paulo and Paraná, Brazil). Its occurrence is due to the flooding of Sete Quedas waterfall, as a result of the construction of Itaipu Reservoir. Furthermore, there is absence or low abundance of natural predators, like *Salminus brasiliensis*, since this species has difficulties to adapt or even survive in reservoirs.

The fish species *Loricariichthys platymetopon* Isbrücker and Nijssen, 1979, known as “cascudo chinelo”, “acari”, “cascudo viola”, and “raspa canoa” (Figure 1), has its natural distribution in Prata River basin (Reis and Pereira 2000). This fish species exhibit body covered with dermal plates disposed in series; ventral mouth and reduced swim bladder, involved by a bony capsule attached to the posterior part of the cranium (Britski *et al.* 2007).

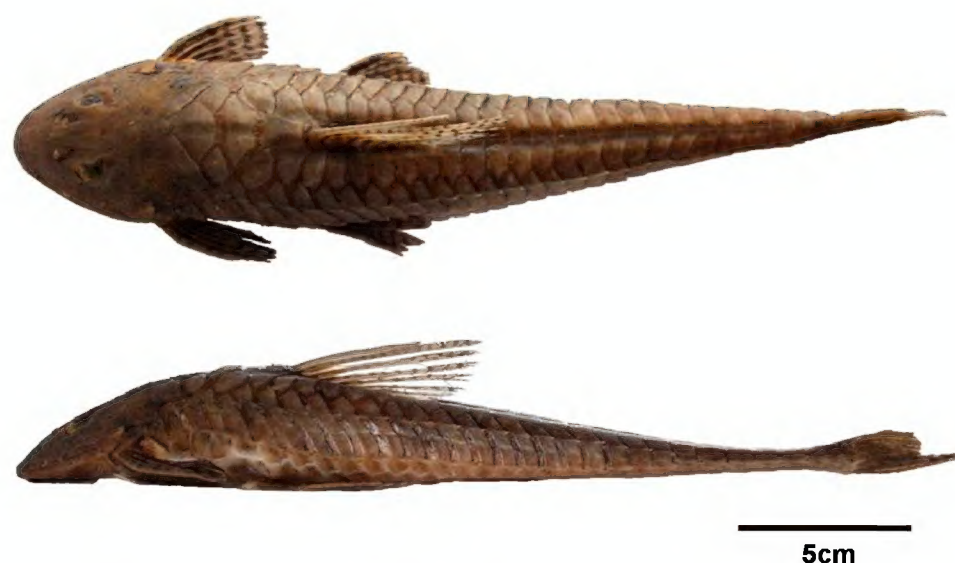
The diet is composed mainly by organic detritus, sediment (mineral particles), Diptera larvae (Chironomidae), microcrustaceans, nematodes, mites, mollusks and algae (Fugi *et al.* 1996), representing an important role in the detritus food chain, in the energy flow and cycling of nutrients in ecosystems (Bowen 1983; Fugi *et al.* 2001). This species lives in lentic and semi-lentic environments (Querol *et al.* 2002), with little requirement of dissolved oxygen of the water (Azevedo 1938). Furthermore, this species does not carry out reproductive migration, not depending of tributaries for complete its cycle of life (Marcucci *et al.* 2005).

The standard length (Ls) of this species can vary from 11.0 cm to 23.8 cm (Fugi *et al.* 1996), presenting size on the onset of gonadal maturation around 13.0 cm (Marcucci *et al.* 2005); males present parental care during the reproduction, carrying the eggs in the lips (Dei Tos *et al.* 1997).

This species of fish presents high potential for pisciculture at Rio Grande do Sul state, Brazil (Baldisserotto, 2009) being one of the most captured species in the fisheries in that state. It presents good productivity of fillet, and the carcass can be used as complement of ration due to its good calcareous composition (Querol *et al.* 1996).

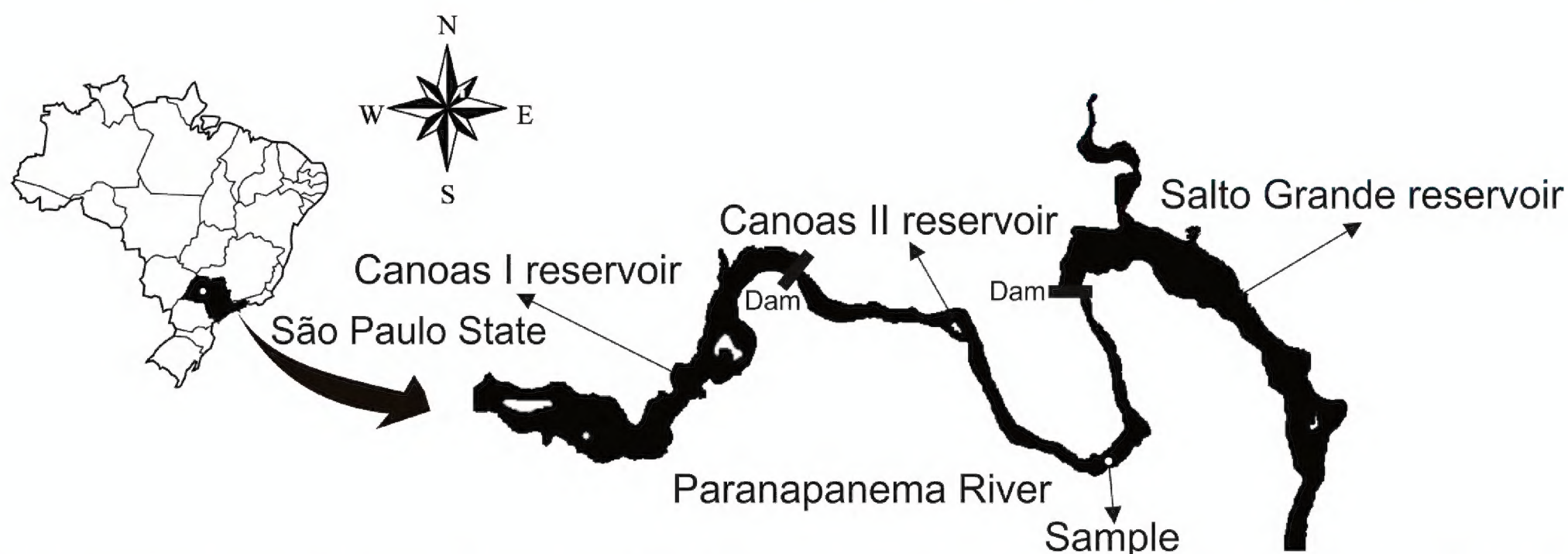
After the formation of Itaipu Reservoir, located 150 km downstream of Sete Quedas waterfall, a natural barrier between the stretches of Upper and Middle Paraná River was lost (Agostinho *et al.* 2007). Approximately 37 species of fishes raised the river, invading the floodplain upstream (Langeani *et al.* 2007). Four species, the “piranha” *Serrasalmus marginatus*, the “cangati” *Parauchenipterus galeatus*, the “armado” *Pterodoras granulosus* and the “cascudo” *Loricariichthys platymetopon* are among the most abundant in the fish communities of the floodplain (Gaspar da Luz *et al.* 2004). Furthermore, the species continued ascending and colonizing reservoirs upstream the Upper Paraná River basin.

In studies carried out until 1998 there was no register about this species of fish in reservoirs of Paranapanema River, as Capivara, Salto Grande (Bennemann *et al.* 2000; Dias and Garavello 1998) and Jurumirim (Carvalho and Silva 1999). However, the massive presence of this species was first recorded between 1993 and 2000, in Taquaruçu Reservoir (Britto and Carvalho 2006), located downstream of reservoirs informed above. The species was first recorded in Capivara Reservoir in 1999 (Marcucci *et al.* 2005), and was among the most abundant species and considered constant in all reservoir between 2001 and 2002 (Hoffmann *et al.* 2005).



**FIGURE 1.** *Loricariichthys platymetopon* (register number: LBP 9115 - UNESP, Instituto de Biociências de Botucatu, SP, Brazil) specimen sampled at Canoas II reservoir, Middle Paranapanema River, border of the states of São Paulo and Paraná, Brazil.





**FIGURE 2.** Map the state São Paulo indicating the reservoirs of Canoas II and Salto Grande, Middle Paranapanema River, border of the states of São Paulo and Paraná, Brazil and sampling site.

The Canoas II Reservoir (Figure 2) is located between Salto Grande and Canoas I reservoirs. We captured 10 individuals of *L. platymetopon* (register number: LBP 9115 - UNESP, Instituto de Biociências de Botucatu, SP, Brazil) in January/2010, in a stretch upstream of Canoas II Reservoir (downstream of Salto Grande Reservoir, 22°55'38.68" S, 50°00'10.86" W). For the samplings we used gill nets (mesh size from 3 to 14 cm between opposite knots) exposed for 18 hours. All specimens (nine females and one male) presented the gonads in mature stage, indicating that the specie is rising the Middle Paranapanema River, and establishing in reservoirs upstream.

The loricariids present parental care, involving different behaviors, as protect their eggs in nest or cavities, or carrying them in the surface of the body. The carrying of eggs is an effective reproductive strategy in environments that present variations in the limnological conditions and water level (Moodie and Power 1982), as observed in several reservoirs. In addition, the low transparency of the water in these sites inhibits the visual localization by predators (Dei Tos *et al.* 1997). Studies carried out in Paraná River indicate that the "dourado" *Salminus brasiliensis* is one of the few natural predators of *L. platymetopon*, composing more than 60% of its diet (Hahn *et al.* (1997). These natural predators such *S. brasiliensis* require long stretches of river to perform its reproductive migration, therefore presenting low abundance in reservoirs.

Therefore, the low abundance of natural predators for cascudo *L. platymetopon* might turn this species abundant, as observed in Capivara Reservoir (Marcucci *et al.* 2005), and may cause unpredictable effects on native fish fauna, such as competition for food and space resources, habitat modification and functioning of the local system, introduction of pathogens and parasites and genetic changes (Agostinho *et al.* 2007).

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